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10/582,805

06/14/2006

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EXAMINER

PHAM, HOA Q

ART UNIT

PAPER NUMBER

2886

MAIL DATE

DELIVERY MODE

01/03/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/582,805 | Applicant(s) YAMAMICHI ET AL. | |
| | Examiner HOA Q. PHAM | Art Unit 2886 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 16, 17 and 22-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16, 17 and 22-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Drawings filed on 2/19/09 are accepted.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13, 16-17, 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al (US 2003/0132392).

Regarding claims 1, 4, 9 and 17, Kuroda et al (of record) discloses a detection apparatus (figure 4) for detecting a target substance in a specimen, utilizing surface plasmon resonance, comprising: a target substance detection element (403), including: a base (101 of figure 1); and a metal structure (102 of figure 1) arranged on a surface of the base in a localized manner; and a target substance capturing body (104) fixed on a surface of the metal structure (102), wherein the metal structure has a cross section (203 of figure 2(b) or 701 of figure 7), and the metal structure has a thickness between

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10 nm and 100 nm (par. [0028]); means (901-904 of figure 9) for bringing the element into contact with the specimen; and detection means (404 of figure 4, 911 of figure 9, 1007 of figure 10) for detecting the target substance captured by the element by irradiating the element with light emitted from a light source and observing transmission of the light. Figures 7 and 10 of Kuroda et al teaches that the metal film structure is opened in different patterns (A-D) which is the same as figures 19-20 of the present invention. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kuroda by dividing into different metal members so that the sensor information can be independently and simultaneously obtained as taught by Kuroda (par. [0044]).

Regarding claims 2-3, Kuroda et al teaches that the width of each metal part can be selected from the range of about 1-200 nm (par. [0029]).

Regarding claims 5-6, Kuroda et al teaches that width of each slit opening (103) is 1-200 nm (par. [0029]).

Regarding claim 7; paragraph [0048] of Kuroda et al teaches that the metal structure (102) is made of a metal selected from gold, silver, aluminum or copper.

Regarding claim 8, paragraph [0028] of Kuroda et al teaches that the base (101) is optically transparent.

Regarding claim 10, see figure 1 for the use of a plurality of apertures (103) that are spaced apart from each other.

Regarding claims 11-12, see claims 2-4 above.

Regarding claim 16, see figure 4 for the use of spectrometer (404) and figure 8 for the use of CCD camera (808) and figure 9 for the use of photomultiplier tube (911).

Regarding claim 23, paragraph [0042] teaches that the target substance capturing body is an antibody.

Regarding claims 22, 24-25 and 27, since Kuroda et al teaches that the target substance capturing body is an antibody, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use an antibody fragment having a multi-specific multivalent antibody because they function in the same manner.

Regarding claims 26 and 28, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the thickness of the metal film between 10nm and 100nm whichever is suitable for the invention.

Response to Arguments

5. Applicant's arguments filed 10/26/10 have been fully considered but they are not persuasive. Applicant argues that Kuroda et al does not disclose "a plurality of metal members which arranged in localized manner". Applicant is noted that the Kuroda's figure 7 teaches that the metal film (701) includes different opening patterns (A-E) which is similar to figures 20A and 20B of the present invention, thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to

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modify figure 7 of Kuroda so that it divide into different metal members as shown in figures 3 and 4 of the present invention because they are function in the same manner. It is also not a critical feature of the present invention.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOA Q. PHAM whose telephone number is (571)272-2426. The examiner can normally be reached on Monday through Friday, 7:00 AM TO 3:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on (571) 272-2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hoa Q. Pham/
Primary Examiner
Art Unit 2886

HP
January 2, 2011